List of Current Claims:

This listing of claims will replace all prior versions, and listings, of claims in the application:

Claims 1- 10 (Cancelled).

11. (Currently amended) A method for measuring a fill level of a fill substance in a container using a fill level measuring device operating according to a travel-time principle, comprising the steps of:

sending periodic transmission signals toward the fill substance;

registering and converting their echo signals into an echo function; and

determining at least one echo characteristic of the echo function, and, on the basis of echo characteristics of at least one preceding measurement, a prediction is derived for echo characteristics to be expected in the case of a current measurement, the echo characteristics include travel-time of maxima of the echo function, especially a maxima of fill substance surface, a maxima of a floor of the container or maxima of a fixedly installed disturbance on the basis of travel-time of at least one maximum of a previous measurement, a prediction is made for travel-time of a corresponding maximum to be expected in the case of the current measurement, wherein:

the prediction is made for travel-time of the maxima by calculating an instantaneous acceleration and an instantaneous rate of change of the travel-time on the basis of at least three preceding measurements, and the travel-time to be expected is extrapolated on the basis of the acceleration and the rate of change;

echo characteristics of the current measurement are determined, taking into consideration the prediction[[,]]; and[[,]]

on the basis of the echo characteristics, the current fill level is determined.

Claims 12 – 16 (Cancelled).

17. (Previously presented) The method as claimed in claim 11 wherein:

an echo characteristic is a travel-time of a wanted echo reflected on the fill substance surface;

a predicted travel-time to be expected for the wanted echo reflected on the fill substance surface in the case of a current measurement is ascertained on the basis of at least one preceding measurement;

that maximum of an echo function for the current measurement is selected whose travel-time has a smallest deviation from the predicted travel-time of the wanted echo reflected on the fill substance surface; and,

taking into consideration the travel-time of this maximum, the current fill level is ascertained.

18. (Currently amended) The method as claimed in claim 11, wherein:

an echo characteristic is a travel-time of an echo reflected on the floor of the container;

a predicted travel-time or an estimated value for the travel-time to be expected for the echo reflected on the floor of the container in the case of a current measurement is ascertained on the basis of at least one preceding measurement;

that maximum of an echo function for the current measurement is selected whose travel-time has a smallest deviation from the predicted travel-time of the echo reflected on floor of the container; and,

taking into consideration the travel-time or the estimated value for the travel-time of this maximum, the current fill level is ascertained.

Claim 19 (Cancelled).

20. (Currently amended) The method for measuring a fill level of a fill substance in a container as claimed in claim 11, wherein:

the measured results are ~~continuously~~ continually reviewed for their plausibility.